or tonsils associated with other defects were absent considerably more than those with enlarged or diseased tonsils only.

Decayed teeth showed little or no effect on absence, and defective vision failed to show a consistent effect on absence from school on account of sickness.

4. Absence from causes other than sickness showed variations somewhat similar to absence from sickness; the groups with defects were absent more than the group with no defects.

THE SCHOOL NURSE: HER DUTIES AND RESPONSIBILITIES.[1]

By TALIAFERRO CLARK, Surgeon, United States Public Health Service.

The greatly specialized nursing service of the present time did not suddenly spring into existence, but has been of more or less gradual evolution. At no time throughout recorded history has the condition of the poor and helpless sick failed in appeal to the mercy and sympathy of special groups of individuals. The ancient Egyptians were not unmindful of the humanitarian duty to help them. Long before the Christian era the priests of Israel enjoined their charges "to visit the sick, in order to show sympathy, to cheer, aid, and relieve them in their suffering."

With the passing of the old order and the dawning of the new, this work was largely carried on by conventual orders. By the establishment of a training school for nurses in London in 1840, and the founding of the first district nursing association by William Rathbone in 1859, the nursing movement received a distinct impetus, which has expanded to include the many forms of nursing service of the present day and generation.

THE BEGINNING OF SCHOOL HEALTH SUPERVISION.

Since it is impracticable to disassociate the school from the home in successful school health work, so, likewise, is it futile to attempt school medical service without considering the school nurse. To France belongs the honor of first beginning school health supervision in 1837, when this duty was imposed on the school authorities by royal ordinance.

The first attempt at school health supervision in this country was made in Boston, Mass., in 1894, when school medical inspection was started for the control of communicable diseases. However, it was not until some years later that school nursing became a recognized institution in both this country and England.

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THE GENERAL QUALIFICATIONS OF THE SCHOOL NURSE.

It has been said that poets are born, not made. So it is with the most successful school nurse. Unless she has the background of a sound heredity, is tactful and of equable temperament, is herself in good health, and is imbued with a love and understanding of children, her work will be more difficult and less fruitful of results than otherwise would be the case.

Training.—In addition to her regular training-school and hospital work, it is preferable that the school nurse shall have had public-health nursing experience and some practical instruction in the essentials of nutrition and in the sanitary requirements of school buildings and grounds. In the present stage of development, or lack of development, of school hygiene in different States and communities, the school nurse should have a background of training and experience, which at first sight would seem not properly required of her. In any case, whether or not circumstances require of her the discharge of certain duties more properly the task of a school physician, the school nurse with such training and experience is the best possible aid to the school physician.

PROPORTION OF PUPILS TO EACH SCHOOL NURSE.

In general, school nurses should be assigned in the proportion of 1 nurse to each 1,000 to 2,000 school children, varying with the density of population, the average number of children to the family, the size of the school district, and accessibility of the homes from the standpoint of distances to be traveled in proceeding from home to home in follow-up work.

In rural districts the proportion of children to a nurse is usually much larger than is the case in cities, owing to the difficulty of securing adequate funds. This is unfortunate, because, on account of the long distance a nurse is required to travel in visiting rural homes, fewer children can be looked after in a given time and large numbers of children who, as a rule, are without special health supervision, are perforce denied these privileges.

Finally, in a school health supervision system which includes special school clinics, additional nurses should be provided in the proportion of one nurse for each operator.

Combined school and routine health work.—In communities where the school nursing service is under the direction of the health authorities, the school nurse can be utilized with profit for combined school and health department work. In such case nurses should be assigned in proportion of 1 nurse to 500 school children.

Unification of the duties of the school and public-health nursing service in one system will be more economical and produce more

satisfactory results than is possible from the present usual practice. In many communities it is not uncommon for a single home to be visited in turn by a contagious-disease nurse, a nurse of the district nursing association, a tuberculosis nurse, a nutrition worker, and by representatives of a number of social agencies, greatly to the annoyance of the householder. In the vast majority of rural districts it will not be possible properly to cover the whole field of school nursing service, except by such combination, owing to the nearly universal lack of funds to carry out comprehensive and useful programs separately.

Supervising nurses.—Where three or more school nurses are employed, one of them should be designated as supervisor and held responsible for the proper conduct of the work. In large school systems, assistants to the supervising nurse should be employed in the proportion of approximately 1 assistant to every 10 nurses.

Duties of the supervising nurse.—The supervising nurse is expected to plan and supervise the work of the school nurses. She should advise with the school medical and teaching staffs and systematize the school nursing service so as to obtain the best result from the work. She should be held responsible for the satisfactory discharge of their duties by individual workers, and be required to instruct them individually and collectively in routine school nursing and in the more specialized clinic and health education work.

Duties of a School Nurse.

The duties that may be expected of a school nurse will vary according to whether no school physician is employed, a physician is employed on full-time or part-time basis, and whether her work is in a rural or urban school.

A. WHEN A FULL-TIME PHYSICIAN IS EMPLOYED.

In schools where a physician is employed on full-time basis the nurse's work should supplement that of the school physician and correlate with it. The school nurse should be directly responsible to the school physician for the proper discharge of her duties, which may be for routine or special work.

1. *Routine duties.*—In any circumstance there are certain duties required of school nurses in general, irrespective of the type of school or character of the medical assistance. Briefly, these are as follows:

(*a*) Daily inspection, instruction, and disposition, usually in the morning, in a room set aside for the purpose, of children referred by the school physician or members of the teaching staff, who are sick with some communicable disease, suffering from parasitic skin infections, or in need of attention in case of accidents or emergency.

(*b*) Routine classroom inspection at frequent intervals for the purpose of detecting unreported or unnoticed cases of communicable disease, noting the hygienic conditions of the classrooms, including cleanliness, the seating of children, the temperature, the quality of ventilation, and the regulation of illumination from the standpoint of visual comfort.

(*c*) Health instruction to pupils.

(*d*) Health instruction to teachers.

(*e*) Follow-up work.

(*f*) Observation of the sanitary condition of the buildings and grounds.

2. *Special duties—*

(*a*) Physical inspection.

(*b*) Special classes.

(*c*) Open-air schools.

(*d*) School clinics.

B. WHEN A PART-TIME PHYSICIAN IS EMPLOYED.

In schools having a volunteer medical service or service of a school physician on part-time basis, in addition to the routine duties outlined, the nurse may properly engage in special work under the physician's direction, with special attention to preliminary physical inspection for detecting the more obvious physical defects and referring handicapped children to the school physician for confirmation of the diagnosis and advice regarding the treatment needed.

Rural School Nursing.

Rural school nursing is quite a different proposition from that of nursing in urban schools and is surrounded by many difficulties. Of these may be mentioned the lack of nursing supervision, skilled medical assistance, and of hospital and clinical facilities. Furthermore, at the present time, by reason of the nation-wide interest in child health work, the demand for school nurses in rural districts is greater than the supply, and a number of earnest workers are attempting school nursing with but limited training and experience in this special field.

In a number of rural districts not only will the nurse be required to perform all of the general duties prescribed for a nurse of a school system having a full-time or part-time physician, but in many instances she will be called upon to act as a representative of the State health officer in so far as her work relates to the control of communicable diseases in the school, and to give instruction to posture and nutrition classes and in health education.

A. GENERAL CONSIDERATION.

1. *Contacts.*—On first taking charge of the work in a given county or district the nurse should—

(*a*) Make contacts with the county and local health officers, if there are such, to secure their cooperation, and arrange for the correlation of the school health work with the other health activities in the district.

(*b*) Familiarize herself with the State laws and local ordinances relating to the control of communicable diseases and the medical inspection of schools and be governed accordingly.

(*c*) Establish a friendly and confidential understanding with the local physicians and other influential citizens, business clubs, women's clubs, and representatives of the welfare agencies working in the district.

A community-wide sentiment in favor of school health supervision is necessary for permanent good. As the work expands volunteer assistance will be needed in the solution of problems that can not be financed by the constituted authorities or by one individual or agency alone.

2. *Preliminary survey.*—A rapid survey of each school in the district should be made to note the number and location, the facilities for carrying on the nursing work, the enrollment and average daily attendance, the hours for opening and closing for the day, the number and arrangement of the classes, the teaching methods, and the cooperation that may be expected of the teaching staff.

3. *Schedule of visits.*—In order to accomplish the most work with the expenditure of a given amount of effort in a prescribed period of time, the school nurse must systematize her work as greatly as possible. She should prepare a schedule of visits to the several schools under her charge, so that teachers, pupils, and parents always may know in advance the day and the hour the nurse will arrive at a given school for weighing and measuring, for physical inspection, for special class work, for health instruction, for conference with parents, or for other purposes.

4. *Hours on duty.*—In general, the hour of opening school should find the nurse at her post of duty prepared for the work of the day. No hard and fast rules can be laid down regarding the number of hours she should remain on duty. These must be determined by local conditions and by the necessities of different situations. The conscientious school nurse is more likely than otherwise to work too many hours each day. The duties of a rural school nurse are arduous, and she should be careful to maintain uniform working schedule for each day in order to conserve her strength. Otherwise the work will suffer in the end.

B. ROUTINE WORK.

As a rule the morning hours of each school day should be devoted to routine work, and the afternoons and Saturdays to special classes, health instruction, and follow-up work. However, if the attendance is small and the routine work in a given school does not require all of the nurse's time, special work should be arranged for the morning hours as well, and the whole of the afternoon given to outside work.

1. *Classroom inspection.*—Immediately following the opening exercises the nurse should make a routine inspection of each classroom to discover incipient cases of communicable diseases, unrecognized cases of communicable diseases, undetected hampering defects, to note hygienic conditions, and to advise with teachers regarding conditions in need of immediate attention.

2. *Special inspection.*—On completion of the classroom inspection, the nurse should repair to a room reserved for the purpose for a more thorough inspection of children—

(*a*) Referred by the principal or teacher.
(*b*) New entrants.
(*c*) Returning after an absence of two or more days.
(*d*) Referred for special attention at classroom inspection.
(*e*) Consultation with parents.

3. *Physical inspection.*—It is an unfortunate circumstance that makes it necessary for a school nurse to examine for physical defects. As a rule the school nurse should not be required to make such inspection, because, strictly speaking, the detection and correction of physical defects should be considered a side issue in school health work, and prevention the main object in view. The preventive side of school medical inspection requires greater technical training than that of the average nurse. Moreover, her other duties are sufficient to occupy all of her time and have, in addition, greater value from the standpoint of health protection and promotion. However, for a long time to come, physical inspections must be made by school nurses or by teachers, in the majority of the rural districts, if they are to be made at all.

It is desirable that the inspection for the detection of physical defects should be made as near the beginning of the school year as possible, on a day or days designated for the purpose. The teaching staff should assist in this inspection. The parents should be notified of the impending inspection in advance, invited to be present, and their consent obtained to making the examination.

When it is impracticable to secure the consent or cooperation of the school authorities in setting aside a special day for inspection purposes, the nurse should inspect as many children as possible on

her regular visiting day to the schools, beginning with the primary grades.

(*a*) Defects: The special conditions which should be looked for and recorded during physical inspections are as follows:

(1) Defective vision.
(2) Defective hearing.
(3) Decayed and defective teeth.
(4) Defective nasal breathing (mouth breathing).
(5) Enlarged lymph glands (specify).
(6) Enlarged tonsils.
(7) Deformities.
(8) Undernourishment.
(9) Suspected tuberculosis (chronic cough, underweight, pallor).
(10) Nervousness.

Hearing should be recorded in terms of tenths of the normal distance at which the ticking of a watch or whispered speech may be heard. The watch used for this purpose should first be tested to determine the distance at which it can be heard by one with normal hearing. For example: If this distance should be 30 inches, it would be recorded as 10/10. If a child could hear the watch at a distance of 15 inches only, namely, 15/30, this would be recorded as 5/10. Each ear should be tested separately, the nurse standing behind the pupil, who should keep one ear covered with the hand and the eyes closed during the test. Do not introduce a finger into the ear canal to prevent hearing.

Vision should be recorded in tenths of the normal distance (Lowell chart is well adapted) in the case of each eye separately, first, without glasses in case glasses are used, and then with glasses. Lack of vision in either eye is recorded as 0/10.

Vision charts should be placed in such position as to receive illumination from one side, and never in such position that obliges the child to face a window while reading the chart. Visual tests should not be made on dark, cloudy days.

Under this heading should be recorded all deformities, especially of the spine, all paralytic conditions, missing fingers, arm or leg, or any other defects not already recorded.

In examining the teeth and tonsils, wooden tongue depressors should be used for each child. After using, they should be broken and placed in a proper receptacle and burned at the end of the day's inspection.

On completion of the inspection, the parents should be notified in the case of children suffering from physical defects requiring attention, using a form similar to the following:

A recent physical inspection of.....
indicates the following abnormal conditions:
.....
You are advised to take.....to your family physician, dentist, oculist, or to a dispensary, for advice and treatment.
(Signed) .....

The notification should be followed by personal visits, especially when the results of notification are negative.

(*b*) Inspection for contagious diseases: Due attention should be paid to the presence of contagious diseases and to parasitic skin infections while making physical inspections. However, the main reliance for the detection and control of these diseases in the school population must be placed on their discovery by routine and special inspections and exclusion during the period of incipiency.

i. Exclusion—Children found presenting symptoms of the following contagious diseases should be excluded from school:

(*a*) Chicken pox.
(*b*) Diphtheria.
(*c*) Measles.
(*d*) Mumps.
(*e*) Scarlet fever.
(*f*) Smallpox.
(*g*) Open tuberculosis.
(*h*) Whooping cough.

Children found suffering from the following conditions should be referred to the family for treatment:

(*a*) Acute eye infections.
(*b*) Ringworm.
(*c*) Scabies (itch).
(*d*) Impetigo contagiosa.
(*e*) Favus.

In all cases of suspected diphtheria the nurse should secure a culture and forward it to the health authorities giving the name, age, and address of the child, and the name of the school.

In handling cases of contagious diseases the nurse should be guided by the rules and regulations of the State and local boards of health.

ii. Readmission—A child excluded from school on account of a quarantinable disease should not be readmitted to the school except on written statement of the health officer to the effect that he or she is no longer suffering from the disease in communicable form.

In communities where there is no health officer, the child should not be readmitted to the school except on a similar written statement

by the family physician and examination by the school physician, if there is one, or by the school nurse.

4. *Weighing and measuring.*—Every child attending school should be weighed and measured at least twice during the school year, preferably at the time of the general inspection at the beginning of the school year, and again during the last month of the school year. Children found underweight according to available standards should be weighed at least once a month in order to determine whether improvement is taking place following advice.

Children should be weighed and measured without shoes and without extra clothing. In the case of boys, the coat and vest should be removed before weighing.

5. *Nutrition classes.*—Children found underweight should be organized into nutrition classes for special instruction. The best results in nutrition work will be obtained if the mothers attend the nutrition classes to receive instruction in the causes and cure of undernourishment and give first-hand information of conditions in the home which act as contributing causes to the child's defective nourishment.

(*a*) Causes: The following are some of the causes of undernourishment:

(1) Insufficient food.
(2) Improper food.
(3) Irregular meals.
(4) Bad eating habits (insufficient chewing).
(5) Use of tea and coffee instead of milk.
(6) Insufficient sleep.
(7) Constipation.
(8) Over excitement (motion pictures and evening entertainment).
(9) Endemic diseases, such as hookworm and malaria.
(10) Physical defects, such as decayed teeth, diseased tonsils, and adenoids.
(11) Too much school work.
(12) Overwork before and after school hours.
(13) Disturbance of endocrine system.

In conducting nutrition classes, the nurse should give instruction with regard to the foods best adapted to promote the growth and development of children, and the reason why. In prescribing diets, mothers should not be instructed in terms of calory requirements, because the average mother will not readily understand and follow instructions given in such terms. The use of milk should be insisted upon, but not to the exclusion or limitation of other desirable food substances.

The results of the most scientifically prescribed diet will be destroyed without the correction of hampering physical defects, and of faulty conditions in the home, such as poor supervision, overwork, insufficient sleep, improper table habits, unhomelike atmosphere, insanitary home environment.

A child 10 per cent underweight according to standard should be classified as undernourished in the sense that it indicates that the child should receive a very thorough physical examination by a competent physician to determine the underlying physical cause, if any, responsible for his condition.

(*b*) School lunch: An important and often overlooked feature of school nutrition work is the school lunch. Where it is impossible or impracticable to serve hot lunches in the school, the nurse should instruct the children and their parents in the preparation of a desirable school lunch. Too frequently the lunch of the school child consists largely of pie, cake, and other nonessential and indigestible food substances.

6. *Posture classes.*—In schools without physical training courses, the school nurse can, with advantage, hold posture classes for children of weakened musculature with tendency to spinal curvature or other deformity. Such classes should be composed of children discovered on inspection who hold themselves in bad position, who have marked round shoulders or lateral curvature of the spine and other functional deformities, and children referred by the teacher who habitually assume a sprawling attitude while seated in the classroom and who appear easily fatigued.

7. *Follow up.*—In a recent study of sickness and school absences among school children by the United States Public Health Service,[2] it was shown in the case of 6,099 school children with 666,449 possible number of days of school attendance for one year, that 5.6 per cent or 37,321 days, were lost on account of sickness, and 3 per cent, or 19,993 days, were lost on account of other causes. These figures are cited to show the relatively great importance of follow-up work as compared with the other duties of a school nurse. Not only is it possible for the nurse by instruction in personal and home hygiene, care of the sick, and in the care and preparation of food, to shorten the duration of the absence from sickness in individual instances, but also reduce the number of cases of sickness arising during the year and the number of absences from causes other than sickness.

Follow-up work is required for the purpose of—

(*a*) Explaining the nature of notified physical and mental handicaps, the effect thereof on the child's health, school progress, and economic efficiency, and the proper remedy.

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[2] Sickness among school children—Loss of time from school among 6,130 school children in 13 localities in Missouri. By Selwyn D. Collins. Public Health Reports, July 8, 1921. Reprint No. 674.

(*b*) Explaining the nature of the quarantinable diseases and the necessity and importance of the strict observance of quarantine for the protection of the community and of other members of the family.

(*c*) Inquiring into the presence of open tuberculosis in the home in the case of children suspected of having tuberculosis.

(*d*) Inquiring into absences of more than two days' duration from unexplained causes.

(*e*) Securing the cooperation of the parents in health instruction and enforcing in the home the regimen prescribed for children in special classes and schools.

(*f*) Distributing pertinent health literature prepared or approved by the State and local health departments.

(*g*) Securing the cooperation of the parents in practicing in the home the principles of health protection and promotion taught by health instruction in the regular and special classes and special schools.

8. *Health instruction.*—To be effective, health instruction should be made a part of the school curriculum. However, in the absence of such an arrangement, the school nurse should interest the teacher in giving health instruction and help her to select suitable subjects and to secure reliable health education material.

The nurse should realize that in the majority of instances the teacher herself is in need of health instruction. For this reason she should take advantage of teachers' institutes and arrange special occasions for the health instruction of the teachers in her district. The nurse should also impress the teacher with the importance of her own personal appearance and conduct and the effect thereof on the health habits of her pupils. She should tactfully advise regarding the health value of a neat personal appearance and the strict observance of personal hygiene in the formation of proper health habits by her charges.

Fundamentally, health instruction of children consists largely in the cultivation of good health habits, in instruction regarding the underlying prinicples of health-promoting measures and the causes and control of communicable diseases, and in creating a sense of responsibility to the community, not only from the standpoint of the observance of the principles of personal hygiene individually but also from that of supporting measures for maintaining the community health.

Health instruction of children should comprise:

(*a*) Giving health talks: The nurse should take advantage of the opportunity of contact with individual children in routine school work to impart individualized instruction. At the beginning of the school year she should confer with the school principal and teachers

in regard to health talks. These should vary with the grade visited. Some of the subjects that may be covered are as follows:

(1) Fresh air—both night and day.
(2) Proper amount of rest and sleep.
(3) Food values, emphasizing effects of too much tea and coffee.
(4) Mastication of food.
(5) Correct posture and deep breathing.
(6) Care of the body, special care of the hair, nails, teeth, and skin.
(7) Prevention of colds.
(8) Proper use of the handkerchief.
(9) Proper clothing.
(10) The communicable diseases, and how they are spread.
(11) Disinfection.
(12) Tonsils and adenoids.
(13) Tuberculosis.
(14) Vaccination.
(15) Quarantine.
(16) General hygiene.

(*b*) Cultivating health habits through—

(1) Toothbrush drills.
(2) The use of handkerchief.
(3) Washing the hands, and baths.
(4) Attention to the bowels.
(5) Maintaining correct posture.
(6) Securing sufficient rest and sleep.

(*c*) Organization of school health clubs.

(*d*) Preparing posters, compositions, and other health education material by the children.

(*e*) Cooperating with the parents by—

(1) Consultation at school.
(2) Visits to the home.

9. *Observation of the sanitary condition of school buildings and grounds.*—It is desirable that the rural school nurse shall have had some previous instruction in the sanitary requirements of school buildings and school grounds, because in schools where no physician is employed she can accomplish a very great good by giving advice to school principals and school boards regarding insanitary conditions in the school environment which should be corrected.

Due attention should be paid to the proximity of nuisances which may be abated, the protection of the water supply from surface drainage, the location of privies in respect of drainage planes to avoid pollution of the water supply, the use of the common drinking cup

and the substitution of bubbling fountains therefor, the facilities for washing the hands, the provision of cloak and lunch rooms and their cleanliness, the condition of the heating plant and the efficiency of the ventilation system, the tinting of the classroom walls and the seating of children from the standpoint of maximum illumination with the least visual discomfort, and the condition of the school grounds from the standpoint of adequate play space, drainage, and walks.

10. *Records.*—The nurse should keep accurate records of her work, which at all times should be available for the information of the health and educational authorities. Special forms should be used for recording the results of inspection, for recording follow-up work, for use in connection with the control of communicable diseases, and other forms as the necessity of them arises by reason of local conditions or requirements.

SANITARY CONDITIONS ON THE FRONTIERS OF WESTERN EUROPE.

Statements of the British Minister of Health.

The right honorable C. Addison, M. P., First Minister of Health of the British Empire, commenting upon investigations recently made by the Health Committee of the League of Nations, makes the following statements: [1]

"* * * After the commission had made a detailed inquiry into this question [relating to certain quarantine procedures] they proceeded by sea from Beyrut to Constantinople. This journey, which lasted nine days, is a good illustration of the necessity of international action in health matters. The ship visited nine successive ports, Tripoli (Turkish), Limasol, Cyprus, Adalia (Turkish), Rhodes (Italian), Samos (Greek), Smyrna (Greek), and Chanak (interallied). Different regulations governed each of these visits, which were made without any reference, except by examination of the bill of health, to the results of the examinations already made at previous ports. The commission recommends that 'the fullest possible use should be made of the larger ports, which are properly equipped and organized to deal with infectious diseases on ships, and the repetition of minor and incomplete measures at ports which are only indifferently equipped should be avoided.' This is a good example of how medical men of various nations, working together, can both improve health conditions and may also prevent unnecessary interference with trade and shipping.

[1] Taken from The Daily Telegraph (London), Aug. 8, 1922.